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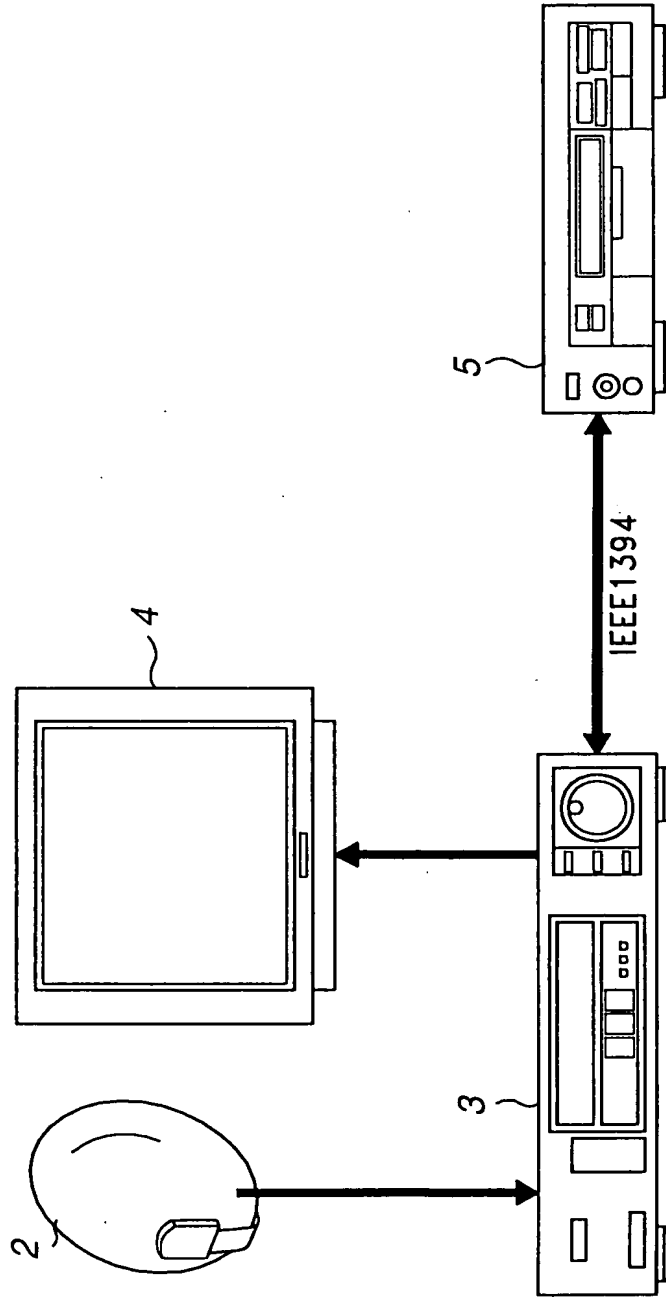


FIG.1

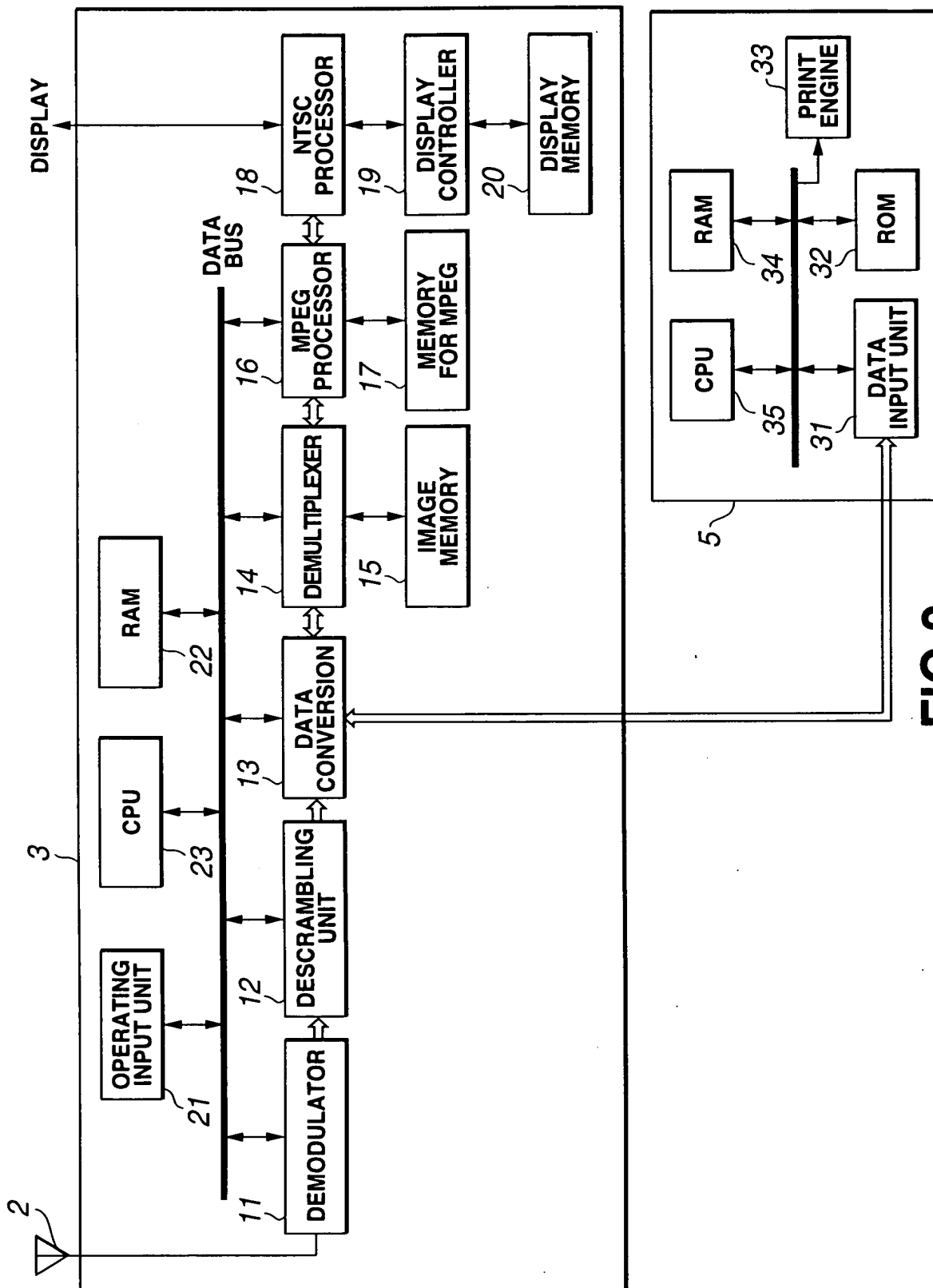


FIG.2

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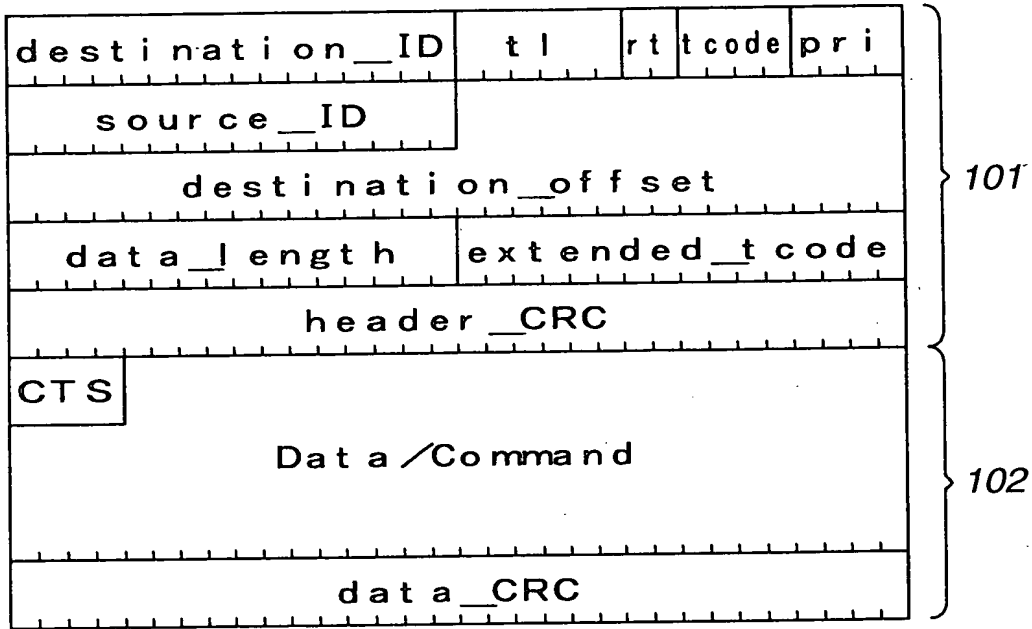
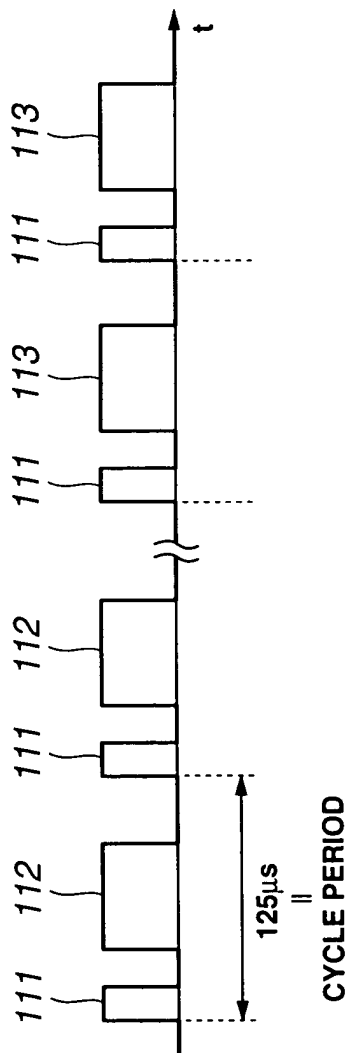


FIG.3

|            |            |              |            |        |            |
|------------|------------|--------------|------------|--------|------------|
| CTS        | ctype      | subunit_type | subunit_ID | opcode | operand[0] |
| operand[1] | operand[2] | operand[3]   | operand[4] |        |            |
| . . . . .  |            |              |            |        |            |
| operand[n] |            |              |            |        |            |

FIG.4

1. The first step is to identify the problem. This involves understanding the current situation and what needs to be changed.



**FIG. 5**

|               | pixel_x | pixel_y | interlaced/<br>progressive | pixel<br>format | screen<br>aspect ratio | pixel<br>aspect ratio | based<br>standard            | image<br>size |
|---------------|---------|---------|----------------------------|-----------------|------------------------|-----------------------|------------------------------|---------------|
| 1080_422_16x9 | 1920    | 1080    | interlaced/<br>progressive | YCbCr<br>4:2:2  | 16:9                   | 1:1                   | ITU-R BT.<br>709-2           | 3.96MB        |
| 1080_420_16x9 | 1920    | 1080    | interlaced/<br>progressive | YCbCr<br>4:2:0  | 16:9                   | 1:1                   | ITU-R BT.<br>709-2           | 2.97MB        |
| 720_422_16x9  | 1280    | 720     | progressive                | YCbCr<br>4:2:2  | 16:9                   | 1:1                   | ANSI/SMP<br>TE 296<br>M-1997 | 1.76MB        |
| 720_420_16x9  | 1280    | 720     | progressive                | YCbCr<br>4:2:0  | 16:9                   | 1:1                   | ANSI/SMP<br>TE 296<br>M-1997 | 1.32MB        |
| 576_422_4x3   | 720     | 576     | interlaced/<br>progressive | YCbCr<br>4:2:2  | 4:3                    | 1.07:1                | ITU-R<br>BT.1203             | 810KB         |
| 576_420_4x3   | 720     | 576     | interlaced/<br>progressive | YCbCr<br>4:2:0  | 4:3                    | 1.07:1                | ITU-R<br>BT.1203             | 608KB         |
| 480_422_16x9  | 720     | 480     | interlaced/<br>progressive | YCbCr<br>4:2:2  | 16:9                   | 1.19:1                | ITU-R BT.<br>709-2           | 675KB         |
| 480_420_16x9  | 720     | 480     | interlaced/<br>progressive | YCbCr<br>4:2:0  | 16:9                   | 1.19:1                | ITU-R BT.<br>709-2           | 506KB         |
| 480_422_4x3   | 720     | 480     | interlaced/<br>progressive | YCbCr<br>4:2:2  | 4:3                    | 0.89:1                | ITU-R<br>BT.601-4            | 675KB         |
| 480_420_4x3   | 720     | 480     | interlaced/<br>progressive | YCbCr<br>4:2:0  | 4:3                    | 0.89:1                | ITU-R<br>BT.601-4            | 506KB         |

**FIG.6**

[illegible]

**FIG.7**

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| value            | Type                    | Meaning                    |
|------------------|-------------------------|----------------------------|
| 20 <sub>16</sub> | 1080i_422chunky_16x9    |                            |
| 21 <sub>16</sub> | 1080p_422chunky_16x9    |                            |
| 22 <sub>16</sub> | 720p_422chunky_16x9     |                            |
| 23 <sub>16</sub> | 480i_422chunky_16x9     |                            |
| 24 <sub>16</sub> | 480p_422chunky_16x9     |                            |
| 25 <sub>16</sub> | 480i_422chunky_4x3      |                            |
| 26 <sub>16</sub> | 480p_422chunky_4x3      |                            |
| 28 <sub>16</sub> | 1080i_422liner_16x9     |                            |
| 29 <sub>16</sub> | 1080p_422liner_16x9     |                            |
| 2A <sub>16</sub> | 720p_422liner_16x9      |                            |
| 2B <sub>16</sub> | 480i_422liner_16x9      |                            |
| 2C <sub>16</sub> | 480p_422liner_16x9      |                            |
| 2D <sub>16</sub> | 480i_422liner_4x3       |                            |
| 2E <sub>16</sub> | 480p_422liner_4x3       |                            |
| 30 <sub>16</sub> | 1080i_420planer_16x9    |                            |
| 31 <sub>16</sub> | 1080p_420planer_16x9    |                            |
| 32 <sub>16</sub> | 720p_420planer_16x9     |                            |
| 33 <sub>16</sub> | 480i_420planer_16x9     |                            |
| 34 <sub>16</sub> | 480p_420planer_16x9     |                            |
| 35 <sub>16</sub> | 480i_420planer_4x3      |                            |
| 36 <sub>16</sub> | 480p_420planer_4x3      |                            |
| 38 <sub>16</sub> | 1080i_420liner_16x9     |                            |
| 39 <sub>16</sub> | 1080p_420liner_16x9     |                            |
| 3A <sub>16</sub> | 720p_420liner_16x9      |                            |
| 3B <sub>16</sub> | 480i_420liner_16x9      |                            |
| 3C <sub>16</sub> | 480p_420liner_16x9      |                            |
| 3D <sub>16</sub> | 480i_420liner_4x3       |                            |
| 3E <sub>16</sub> | 480p_420liner_4x3       |                            |
| 60 <sub>16</sub> | Text(ASCII)             | MD-clip ASCII              |
| 61 <sub>16</sub> | Text(ISO8859-1)         | MD-clip modified ISO8859-1 |
| 62 <sub>16</sub> | Text(Music Shifted JIS) | MD-clip Music Shifted JIS  |

FIG. 8

| Value(MSB)                         | Value(LSB)                         | Type   | Meaning         |
|------------------------------------|------------------------------------|--|-----------------|
| 00 <sub>16</sub>                   |                                    |  | sRGB row        |
|                                    | 00 <sub>16</sub>                   | sRGB row   |                 |
|                                    | 01 <sub>16</sub>                   | sRGB row,quadlet                                 |                 |
| 01 <sub>16</sub>                   |                                    |  | YCC row         |
|                                    | 0X <sub>16</sub>                   | YCC4:2:2 row/chunky                              |                 |
|                                    | 1X <sub>16</sub>                   | YCC4:2:2 row/liner                               |                 |
|                                    | 8X <sub>16</sub>                   | YCC4:2:0 row/chunky                              |                 |
|                                    | 9X <sub>16</sub>                   | YCC4:2:0 row/liner                               |                 |
|                                    | X0 <sub>16</sub>                   | Pixel ratio 1.00X1.00/ITU-R BT.709-2/interlace   |                 |
|                                    | X1 <sub>16</sub>                   | Pixel ratio 1.19X1.00/ITU-R BT.709-2/interlace   |                 |
|                                    | X2 <sub>16</sub>                   | Pixel ratio 0.89X1.00/ITU-R BT.709-2/interlace   |                 |
|                                    | X3 <sub>16</sub>                   | Pixel ratio 0.89X1.00/ITU-R BT.601-4/interlace   |                 |
|                                    | X4 <sub>16</sub>                   | Pixel ratio 1.07X1.00/ITU-R BT.1203/interlace    |                 |
|                                    | X8 <sub>16</sub>                   | Pixel ratio 1.00X1.00/ITU-R BT.709-2/progressive |                 |
|                                    | X9 <sub>16</sub>                   | Pixel ratio 1.19X1.00/ITU-R BT.709-2/progressive |                 |
|                                    | XA <sub>16</sub>                   | Pixel ratio 0.89X1.00/ITU-R BT.709-2/progressive |                 |
|                                    | XB <sub>16</sub>                   | Pixel ratio 0.89X1.00/ITU-R BT.601-4/progressive |                 |
|                                    | XC <sub>16</sub>                   | Pixel ratio 1.07X1.00/ITU-R BT.1203/progressive  |                 |
| 10 <sub>16</sub>                   |                                    |  | DCF Object      |
|                                    | 00 <sub>16</sub>                   | Exif2.1  |                 |
|                                    | 01 <sub>16</sub>                   | JFIF   |                 |
|                                    | 02 <sub>16</sub>                   | TIFF   |                 |
|                                    | 0F <sub>16</sub>                   | JPEG   |                 |
| 80 <sub>16</sub> ~8F <sub>16</sub> | 00 <sub>16</sub> ~FF <sub>16</sub> | Vendor Dependent format                          |                 |
| FE <sub>16</sub>                   |                                    |  | Special meaning |
|                                    | 00 <sub>16</sub>                   | Unit Plug defined                                |                 |
|                                    | 01 <sub>16</sub>                   | don't care                                       |                 |

FIG.9



|                |            |                 |                 |
|----------------|------------|-----------------|-----------------|
| $Y_1(L_1)$     | $Y_2(L_1)$ | $C_{b1}(L_1)$   | $C_{r1}(L_1)$   |
| $Y_3(L_1)$     | $Y_4(L_1)$ | $C_{b3}(L_1)$   | $C_{r3}(L_1)$   |
| $\vdots$       |            |                 |                 |
| $Y_{N-1}(L_1)$ | $Y_N(L_1)$ | $C_{bN-1}(L_1)$ | $C_{rN-1}(L_1)$ |
| $Y_1(L_2)$     | $Y_2(L_2)$ | $C_{b1}(L_2)$   | $C_{r1}(L_2)$   |
| $\vdots$       |            |                 |                 |
| $Y_{N-1}(L_M)$ | $Y_N(L_M)$ | $C_{bN-1}(L_M)$ | $C_{rN-1}(L_M)$ |

**FIG.10**

|                     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|
| $Y_1(L_1)$          | $Y_2(L_1)$          | $Y_1(L_2)$          | $Y_2(L_2)$          |
| $C_{b1}(L_1)$       | $C_{r1}(L_1)$       | $Y_3(L_1)$          | $Y_4(L_1)$          |
| $Y_3(L_2)$          | $Y_4(L_2)$          | $C_{b3}(L_1)$       | $C_{r3}(L_1)$       |
| $\vdots$            |                     |                     |                     |
| $Y_{N-3}(L_{M-1})$  | $Y_{N-2}(L_{M-1})$  | $Y_{N-3}(L_M)$      | $Y_{N-2}(L_M)$      |
| $C_{bN-3}(L_{M-1})$ | $C_{rN-3}(L_{M-1})$ | $Y_{N-1}(L_{M-1})$  | $Y_N(L_{M-1})$      |
| $Y_{N-1}(L_M)$      | $Y_N(L_M)$          | $C_{bN-1}(L_{M-1})$ | $C_{rN-1}(L_{M-1})$ |

**FIG.11**

|                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|
| $Y_1(L_1)$      | $Y_2(L_1)$      | $Y_3(L_1)$      | $Y_4(L_1)$      |
| $\vdots$        |                 |                 |                 |
| $Y_{N-3}(L_1)$  | $Y_{N-2}(L_1)$  | $Y_{N-1}(L_1)$  | $Y_N(L_1)$      |
| $C_{b1}(L_1)$   | $C_{r1}(L_1)$   | $C_{b3}(L_2)$   | $C_{r3}(L_1)$   |
| $\vdots$        |                 |                 |                 |
| $C_{bN-3}(L_1)$ | $C_{rN-3}(L_1)$ | $C_{bN-1}(L_1)$ | $C_{rN-1}(L_1)$ |
| $Y_1(L_2)$      | $Y_2(L_2)$      | $Y_3(L_1)$      | $Y_4(L_1)$      |
| $\vdots$        |                 |                 |                 |
| $C_{bN-3}(L_M)$ | $C_{rN-3}(L_M)$ | $C_{bN-1}(L_M)$ | $C_{rN-1}(L_M)$ |

**FIG.12**

|                     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|
| $Y_1(L_1)$          | $Y_2(L_1)$          | $Y_3(L_1)$          | $Y_4(L_1)$          |
| $\vdots$            |                     |                     |                     |
| $Y_{N-3}(L_1)$      | $Y_{N-2}(L_1)$      | $Y_{N-1}(L_1)$      | $Y_N(L_1)$          |
| $Y_1(L_2)$          | $Y_2(L_2)$          | $Y_3(L_2)$          | $Y_4(L_2)$          |
| $\vdots$            |                     |                     |                     |
| $Y_{N-3}(L_2)$      | $Y_{N-2}(L_2)$      | $Y_{N-1}(L_2)$      | $Y_N(L_2)$          |
| $C_{b1}(L_1)$       | $C_{r1}(L_1)$       | $C_{b3}(L_1)$       | $C_{r3}(L_1)$       |
| $\vdots$            |                     |                     |                     |
| $C_{bN-3}(L_1)$     | $C_{rN-3}(L_1)$     | $C_{bN-1}(L_1)$     | $C_{rN-1}(L_1)$     |
| $Y_1(L_3)$          | $Y_2(L_3)$          | $Y_3(L_3)$          | $Y_4(L_3)$          |
| $\vdots$            |                     |                     |                     |
| $C_{bN-3}(L_{M-1})$ | $C_{rN-3}(L_{M-1})$ | $C_{bN-1}(L_{M-1})$ | $C_{rN-1}(L_{M-1})$ |

**FIG.13**

| Address<br>Offset         | 1 <sup>st</sup> byte | 2 <sup>nd</sup> byte | 3 <sup>rd</sup> byte | 4 <sup>th</sup> byte |
|---------------------------|----------------------|----------------------|----------------------|----------------------|
| 00 00 00 00 <sub>16</sub> | Y1(L1)               | Y2(L1)               | Cb1(L1)              | Cr1(L1)              |
| 00 00 00 04 <sub>16</sub> | Y3(L1)               | Y4(L1)               | Cb3(L1)              | Cr3(L1)              |
| :                         | :                    | :                    | :                    | :                    |
| 00 00 05 9C <sub>16</sub> | Y719(L1)             | Y720(L1)             | Cb719(L1)            | Cr719(L1)            |
| 00 00 05 A0 <sub>16</sub> | Y1(L2)               | Y2(L2)               | Cb1(L2)              | Cr1(L2)              |
| :                         | :                    | :                    | :                    | :                    |
| 00 0A 8B FC <sub>16</sub> | Y719(L480)           | Y720(L480)           | Cb719(L480)          | Cr719(L480)          |

FIG.14

00000000 00000000

| Address<br>Offset         | 1 <sup>st</sup> byte | 2 <sup>nd</sup> byte | 3 <sup>rd</sup> byte | 4 <sup>th</sup> byte |
|---------------------------|----------------------|----------------------|----------------------|----------------------|
| 00 00 00 00 <sub>16</sub> | Y1(L1)               | Y2(L1)               | Y1(L2)               | Y2(L2)               |
| 00 00 00 04 <sub>16</sub> | Cr1(L1)              | Cr1(L1)              | Y3(L1)               | Y4(L1)               |
| 00 00 00 08 <sub>16</sub> | Y3(L2)               | Y4(L2)               | Cb3(L1)              | Cr3(L1)              |
| :                         |                      | :                    | :                    |                      |
| 00 07 E8 F8 <sub>16</sub> | Cb717(L479)          | Cr717(L479)          | Y719(L479)           | Y720(L479)           |
| 00 07 E8 FC <sub>16</sub> | Y719(L480)           | Y720(L480)           | Cb719(L479)          | Cr719(L479)          |

FIG.15

| Address<br>Offset         | 1 <sup>st</sup> byte | 2 <sup>nd</sup> byte | 3 <sup>rd</sup> byte | 4 <sup>th</sup> byte |
|---------------------------|----------------------|----------------------|----------------------|----------------------|
| 00 00 00 00 <sub>16</sub> | Y1(L1)               | Y2(L1)               | Y3(L1)               | Y4(L1)               |
| ⋮                         |                      | ⋮                    |                      |                      |
| 00 00 02 CF <sub>16</sub> | Y717(L1)             | Y718(L1)             | Y719(L1)             | Y720(L1)             |
| 00 00 02 D0 <sub>16</sub> | Cb1(L1)              | Cr1(L1)              | Cb3(L1)              | Cr3(L1)              |
| ⋮                         |                      | ⋮                    |                      |                      |
| 00 00 05 9F <sub>16</sub> | Cb717(L1)            | Cr717(L1)            | Cb719(L1)            | Cr719(L1)            |
| 00 00 05 A0 <sub>16</sub> | Y1(L2)               | Y2(L2)               | Y3(L2)               | Y4(L2)               |
| ⋮                         |                      | ⋮                    |                      |                      |
| 00 0A 8B FC <sub>16</sub> | Cb717(L480)          | Cr717(L480)          | Cb719(L480)          | Cr719(L480)          |

FIG.16

| Address<br>Offset         | 1 <sup>st</sup> byte | 2 <sup>nd</sup> byte | 3 <sup>rd</sup> byte | 4 <sup>th</sup> byte |
|---------------------------|----------------------|----------------------|----------------------|----------------------|
| 00 00 00 00 <sub>16</sub> | Y1(L1)               | Y2(L1)               | Y3(L1)               | Y4(L1)               |
| :                         |                      |                      |                      |                      |
| 00 00 02 CF <sub>16</sub> | Y717(L1)             | Y718(L1)             | Y719(L1)             | Y720(L1)             |
| 00 00 02 D0 <sub>16</sub> | Y1(L2)               | Y2(L2)               | Y3(L2)               | Y4(L2)               |
| :                         |                      |                      |                      |                      |
| 00 00 05 9F <sub>16</sub> | Y717(L2)             | Y718(L2)             | Y719(L2)             | Y720(L2)             |
| 00 00 05 A0 <sub>16</sub> | Cb1(L1)              | Cr1(L1)              | Cb3(L1)              | Cr3(L1)              |
| :                         |                      |                      |                      |                      |
| 00 00 08 6F <sub>16</sub> | Cb717(L1)            | Cr717(L1)            | Cb719(L1)            | Cr719(L1)            |
| 00 00 08 70 <sub>16</sub> | Y1(L3)               | Y2(L3)               | Y3(L3)               | Y4(L3)               |
| :                         |                      |                      |                      |                      |
| 00 07 E8 FC <sub>16</sub> | Cb717(L479)          | Cr717(L479)          | Cb719(L479)          | Cr719(L479)          |

FIG.17

|             | msb                                |  |  |  |  |  |  | lsb |
|-------------|------------------------------------|--|--|--|--|--|--|-----|
| opcode      | PRINTER STATUS2(53 <sub>16</sub> ) |  |  |  |  |  |  |     |
| operand[0]  | reserved                           |  |  |  |  |  |  |     |
| operand[1]  | status                             |  |  |  |  |  |  |     |
| operand[2]  |                                    |  |  |  |  |  |  |     |
| operand[3]  | reserved                           |  |  |  |  |  |  |     |
| operand[4]  |                                    |  |  |  |  |  |  |     |
| operand[5]  | Current_print_job-ID               |  |  |  |  |  |  |     |
| :           |                                    |  |  |  |  |  |  |     |
| operand[16] | warning                            |  |  |  |  |  |  |     |
| operand[17] |                                    |  |  |  |  |  |  |     |
| operand[18] | reserved                           |  |  |  |  |  |  |     |
| operand[19] |                                    |  |  |  |  |  |  |     |
| operand[20] |                                    |  |  |  |  |  |  |     |

FIG.18



00000000 00000000

| address<br>offset | msb                |                |        |                |                 |                  |          | lsb     |
|-------------------|--------------------|----------------|--------|----------------|-----------------|------------------|----------|---------|
| 00 <sub>16</sub>  | colorant-<br>Empty | Cover-<br>open | Jammed | Head-<br>error | Small-<br>paper | No-cartrid<br>ge | occupied | testing |
| 01 <sub>16</sub>  | Warmup             | Reserved       |        |                |                 |                  |          |         |

FIG.19



902F80" 6E204350

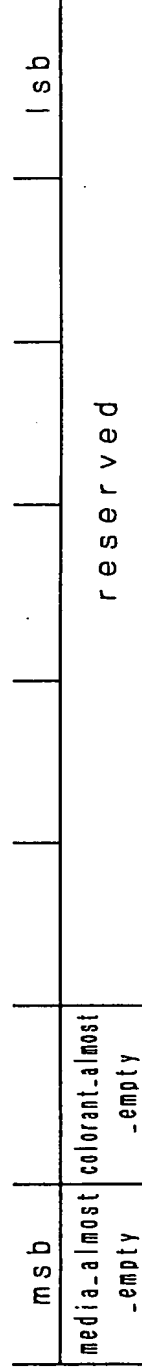
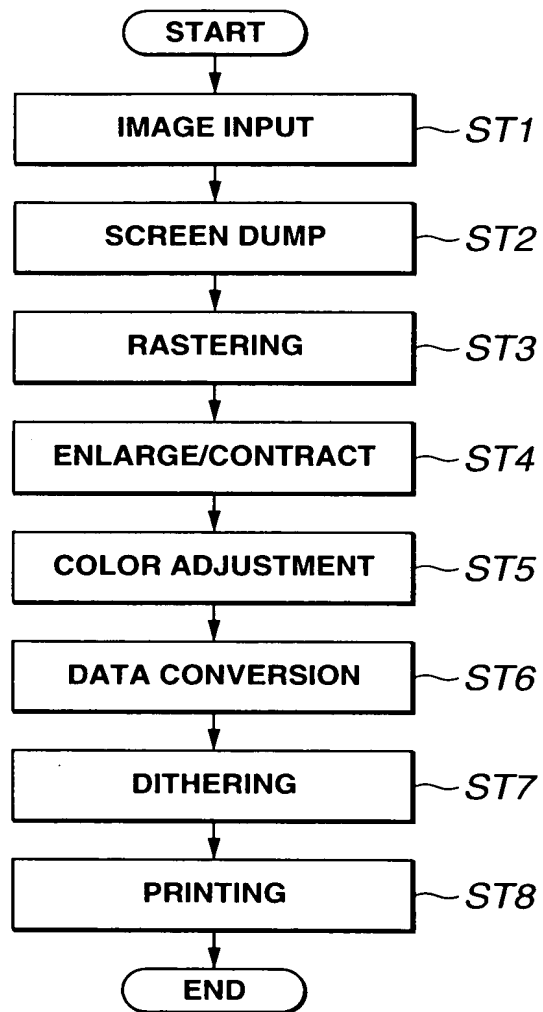


FIG.21





**FIG.23**

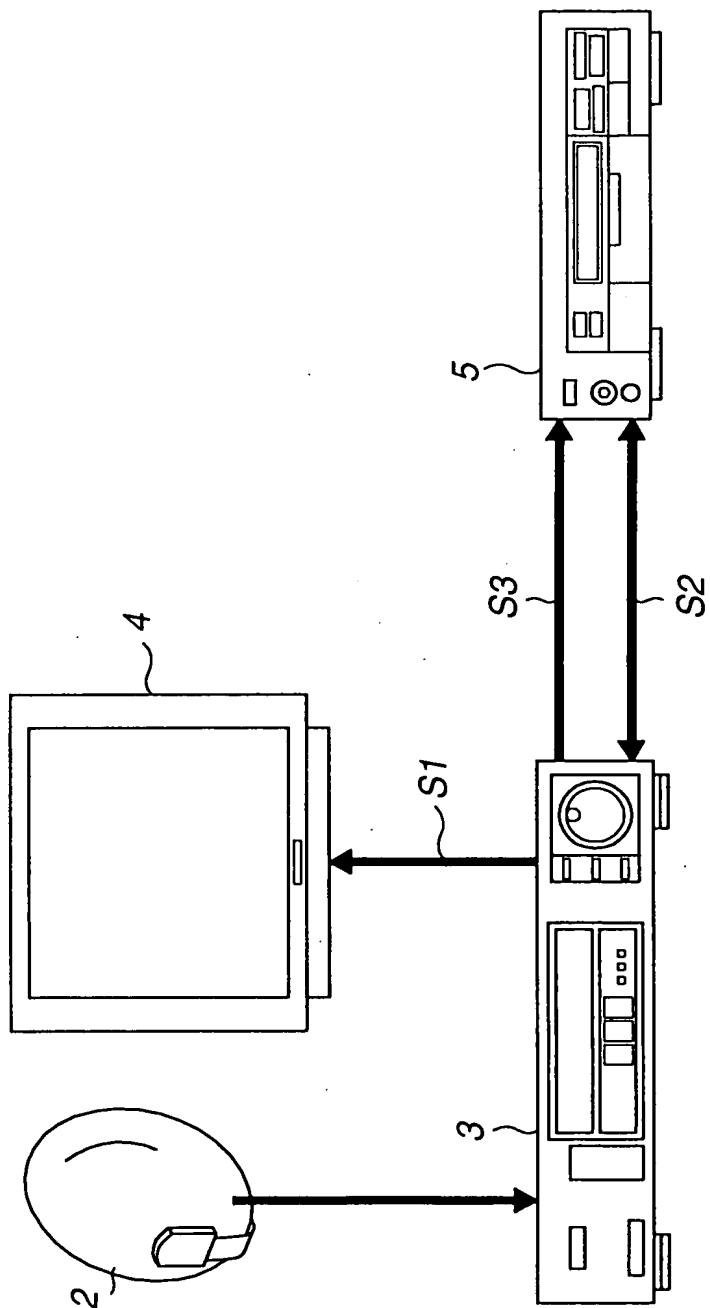
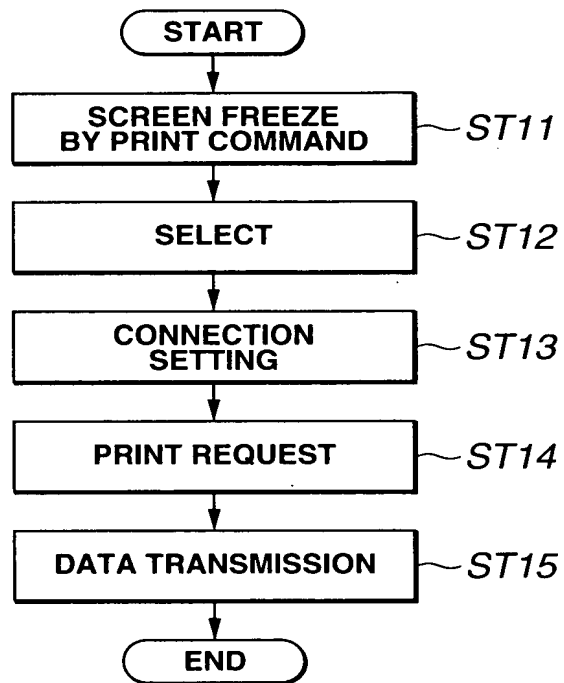


FIG.24



**FIG.25**

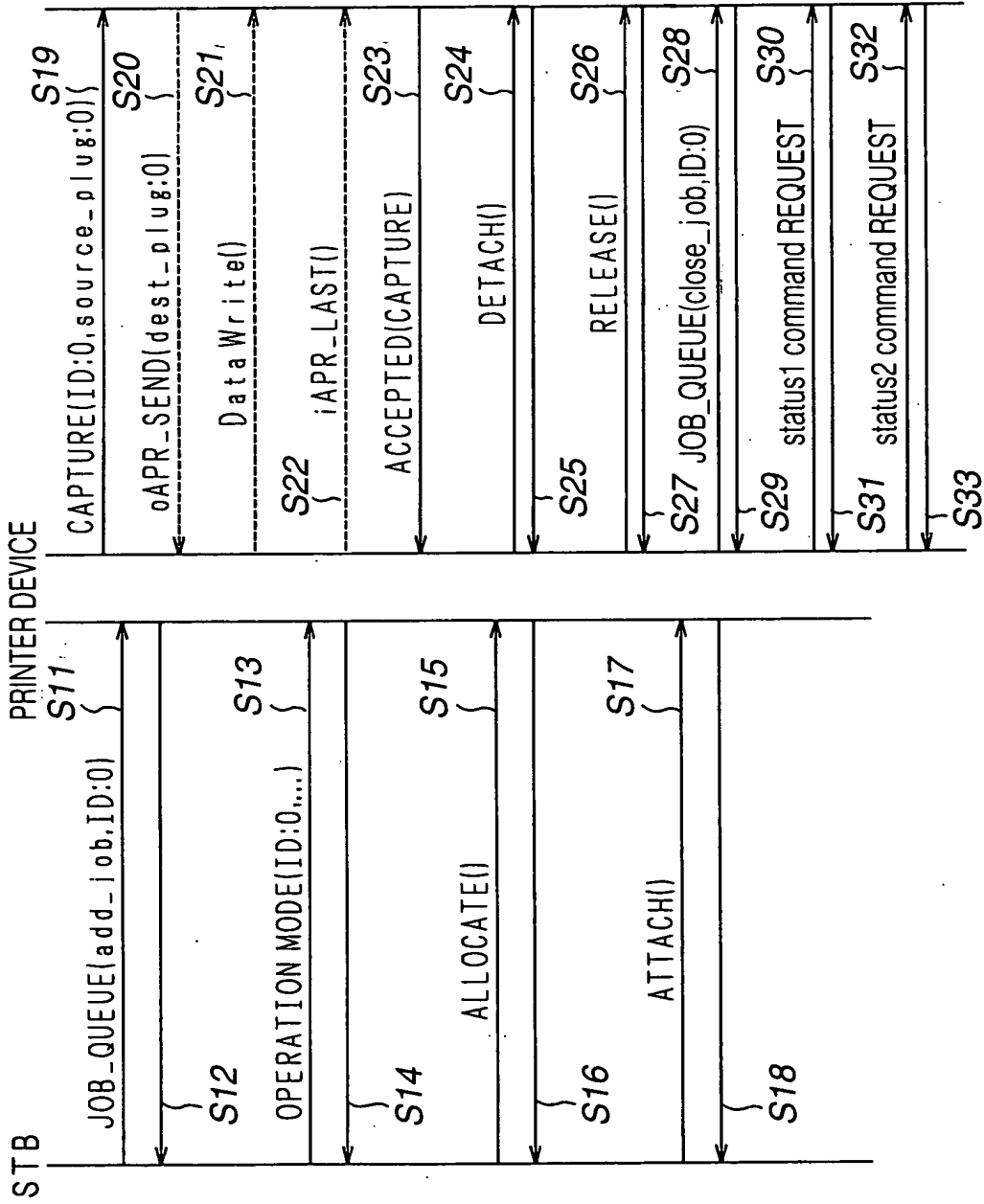


FIG.26



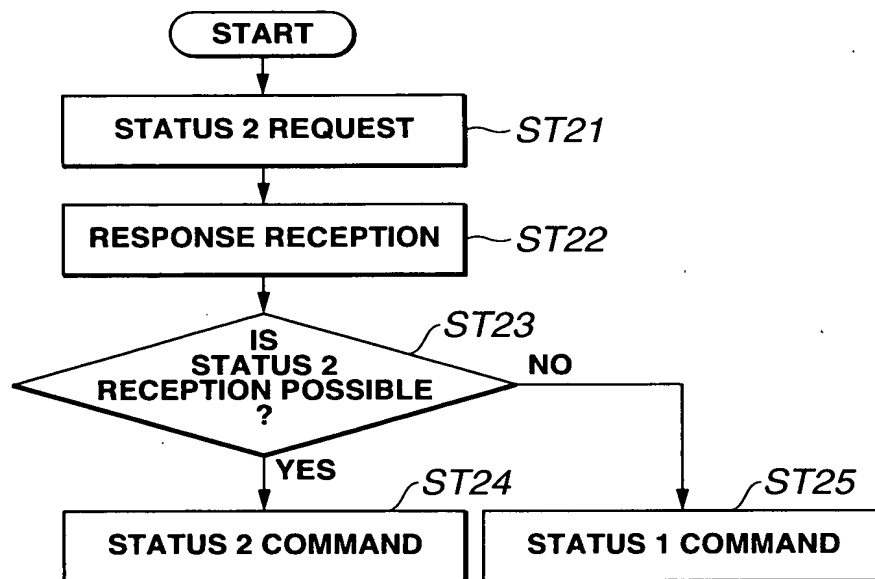
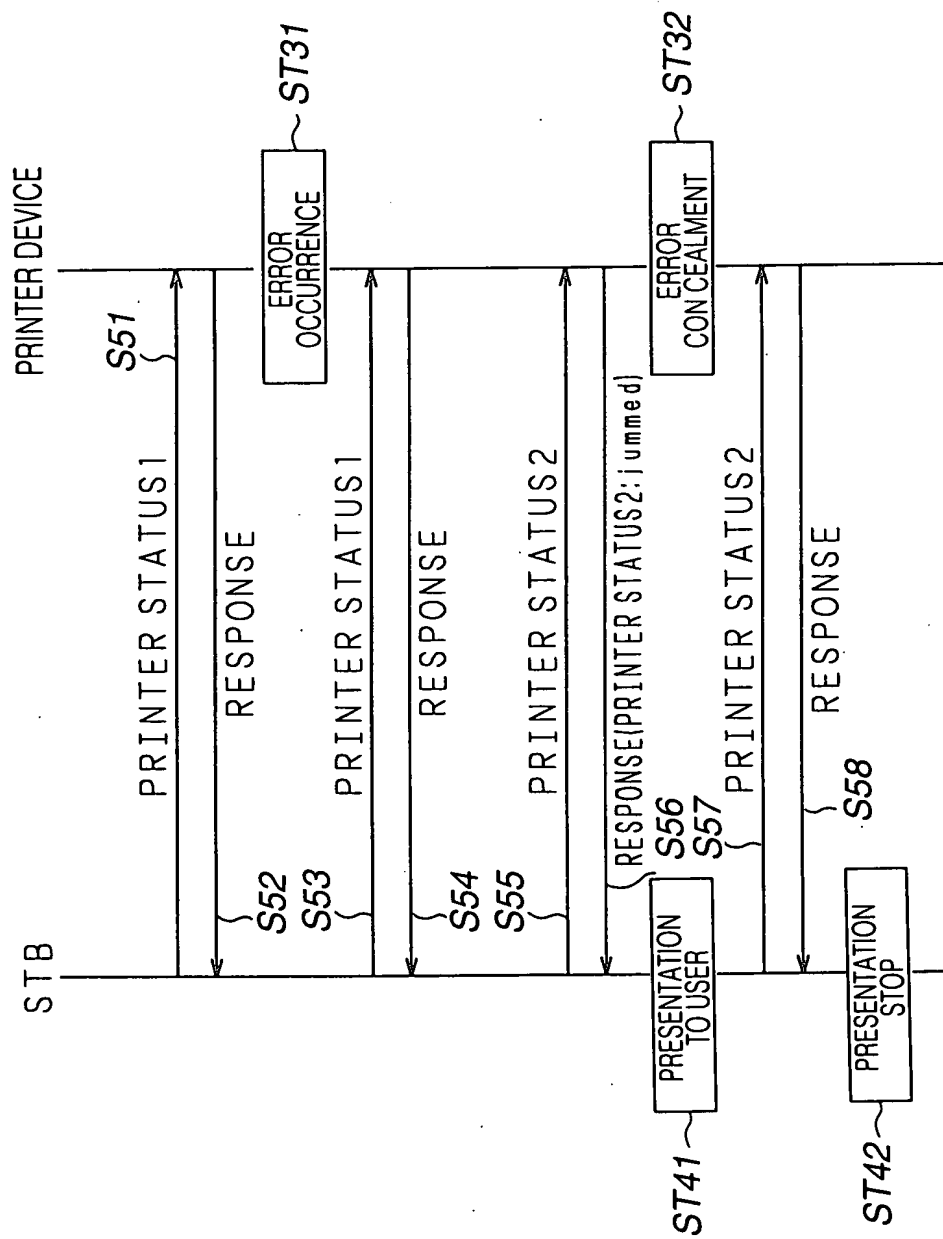


FIG.27

1. The first of the two main parts of the book is devoted to the study of the history of the English language. It begins with a chapter on the prehistoric period, which deals with the languages spoken in Britain before the arrival of the Romans. This is followed by a chapter on the Old English period, which covers the time from the arrival of the Anglo-Saxons in the fifth century to the end of the eleventh century. The third chapter deals with the Middle English period, which spans the years from the late eleventh century to the late fifteenth century. The final chapter in this section is on the Modern English period, which begins in the late fifteenth century and continues to the present day.



# FIG. 28